

micro

Cobra Electronics Corporation  
600 West Cortland Street  
Chicago, IL 60707  
www.cobraelectronics.com

### Do You Think You Need Service

*For technical assistance, please call our Automated Help Desk which can assist you by answering the most frequently asked questions about Cobra products.*

**(773) 889-3087**

*24 hours a day, 7 days a week.*

*A Consumer Service Representative can be reached through this same number 8:00 am - 8:00 pm, Monday through Friday, CST.*

*Technical assistance is also available on-line in the Frequently Asked Questions (FAQ) section at [www.cobraelec.com](http://www.cobraelec.com) or by e-mail to [productinfo@cobraelec.com](mailto:productinfo@cobraelec.com)*

**Do you think you need service call 1.773.889.3087**

*For your product should require factory service please call Cobra first before sending your unit in. This will ensure the fastest turn-around time on your repair."*

You may be asked to send your unit to the Cobra factory. It will be necessary to furnish the following information in order to have the product serviced and returned.

Warranty Repair include some form of proof-of-purchase, such as a mechanical reproduction of the original carbon or a sales receipt. If you send the original receipt it cannot be returned.

and the entire product.

Include a description of what is happening with the unit. Include a typed or clearly print name and address of where the unit is to be returned.

Pack unit securely to prevent damage in transit. If possible, use the original packing material.

Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or First Class Mail to avoid loss in transit to: Cobra Factory Service, Cobra Electronics Corporation, 6500 W. Cortland St., Chicago, IL 60707.

If the unit is in warranty, upon receipt of your unit it will either be repaired or exchanged depending on the model. Please allow approximately 3 to 4 weeks before contacting us for status. If the unit is out of warranty a letter will automatically be sent informing you of the repair charge or replacement charge. If you have any questions, please call 1.773.889.3087 for assistance.

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Made in Thailand

No. 480-306-P-001

Operating Instructions for your

**Cobra® microTALK™**

## 2 Way Radio

FRS 220



Nothing comes close to a Cobra™

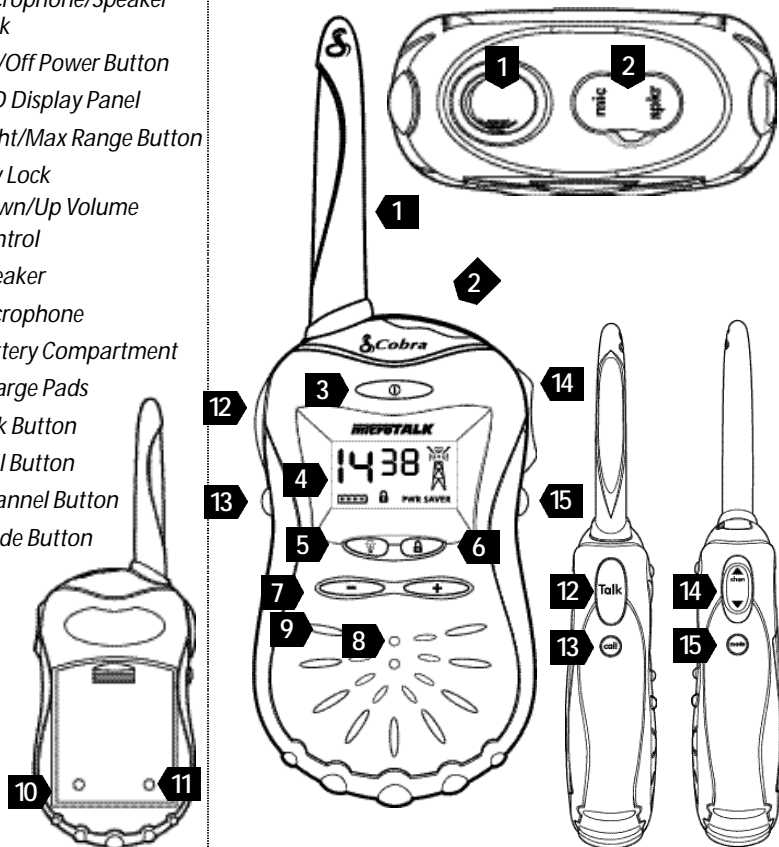


1



# ontrols and Indicators

Antenna  
Microphone/Speaker  
Jack  
On/Off Power Button  
LCD Display Panel  
Light/Max Range Button  
Key Lock  
Down/Up Volume  
Control  
Speaker  
Microphone  
Battery Compartment  
Charge Pads  
Talk Button  
Call Button  
Channel Button  
Mode Button



Thank you for purchasing the Cobra FRS 220 2-way Radio. Properly used, this Cobra product will give you many years of reliable service.

## Customer Support

Should you encounter any problems with the product or not understand its many features, please refer to this owner's manual. If, after referring to the manual, you still need help, call Cobra Customer Service at 773.889.3087.

**This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:**

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

## Cobra Customer Service

Live operators are available  
M-F 8:00 am - 8:00 pm CST  
at: 773.889.3087

Automated Technical  
Assistance available 24  
hours a day, seven days a  
week. E-mail questions to:  
[productinfo@cobraelec.com](mailto:productinfo@cobraelec.com)

Cobra on the World Wide  
Web: Frequently Asked  
Questions (FAQ) can be  
found on-line at:  
[www.cobraelectronics.com](http://www.cobraelectronics.com)

# How to Use Your Cobra *micro* 2-Way Radio

## Contents

|  |            |
|--|------------|
| Features.....                            | 1          |
| The FRS Story .....                      | A1         |
| FCC Warnings                             |            |
| Included Accessories                     |            |
| Controls & Indicators .....              | A2         |
| Our Thanks to You .....                  | A3         |
| Customer Support .....                   | A3         |
| Operating your microTALK .....           |            |
| Battery Installation.....                | 2          |
| Turning On.....                          | 3          |
| Illuminating the Display .....           | 3          |
| Auto Squelch.....                        | 4          |
| Maximum Range Extender/Auto Monitor..... | 4          |
| Select Channel.....                      | 5          |
| Auto Battery Save.....                   | 6          |
| Calling Another Party .....              | 7          |
| Talking To Another Party .....           | 8          |
| Roger Beep Confirmation Tone.....        | 9          |
| Listening For Another Party .....        | 9          |
| Lock Function.....                       | 10         |
| microTALK Range.....                     | 11         |
| Making Life Easier And Safer.....        | 12         |
| Holster/Belt Clip/Desktop Stand.....     | 13         |
| External Microphone/Speaker Jack.....    | 14         |
| Caring for Your microTALK .....          | 15         |
| microTALK Specifications .....           | 16         |
| Limited Two Year Warranty .....          | 18         |
| Optional Accessories .....               | 19         |
| Order Form.....                          | 20         |
| If You Think You Need Service.....       | Back Cover |

## Features of This Product

- Two-way static-free radio with up to a 2 mile range
- 14 channels
- SuperFlex™ antenna
- Holster belt clip
- Roger beep confirmation tone
- Backlit LCD
- Speaker/Microphone jacks

## Operation

### Battery Installation

#### Note

Batteries not included with microTALK 2-way radio.


Always use high quality alkaline or NiMH batteries.

Incorrect positioning can damage both the batteries and the unit.

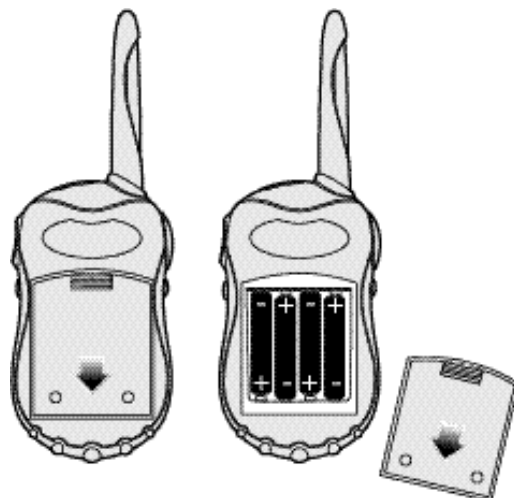
**Only the Cobra NiMH battery (Part #FA-BP) pack can be recharged.**

See Accessories on page 19. Charge ports for recharging NiMH (Nickel Metal Hydride) battery pack are located on back of unit.

#### Note

When batteries are low or need charging the  indicator will blink. Replace alkaline batteries or recharge NiMH battery pack.

### Install Batteries



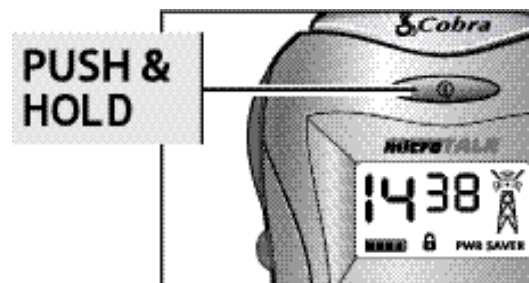
❶ Pull lock tab down to remove battery cover.


❷ Insert four "AAA" batteries. Position batteries according to polarity markings.

2

## Operation

### Turning On Your microTALK



❶ Push and hold the  POWER button for 2 seconds. An audible "tone" will indicate the unit is on, and display will illuminate for 10 seconds.

### Illuminating the Display



❶ Push and release  LIGHT/MAX RANGE button to illuminate display for ten seconds.

### Turning On Your microTALK

#### Note

Whenever the unit is on you can receive communications.

### Illuminating the Display

3

## Operation

### Auto Squelch

### Maximum Range Extender

#### Note

To learn more about the range of your microTALK, see page 10.

Range is dependent on battery condition and geographic territory.

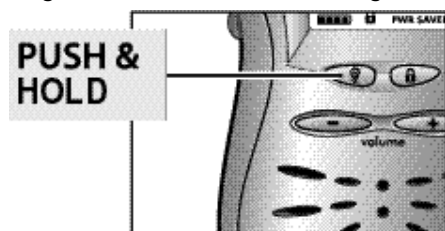
### Auto Monitor

### Auto Squelch

Your microTALK is equipped with Auto Squelch, which automatically shuts off weak transmissions and unwanted noise due to terrain conditions or if you have reached your range limit.

### Maximum Range Extender

Auto squelch can be temporarily removed to allow all signals to enter (Maximum Range Extender).



- 1 Push and hold  LIGHT/MAX RANGE button to allow all signals to enter.

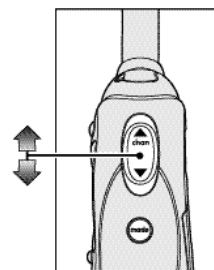
### Auto Monitor

When the signal you want to hear is consistently weak, you may place the radio in Maximum Range mode without having to constantly hold the button: Press and hold the Maximum Range Extender button for five seconds. To return to normal operation, momentarily press the Maximum Range Extender button again or change channels.

## Operation

### Select Main Channel (1-14)

- 1 Turn on the microTALK 2-Way Radio.



- 2 Select any of the 14 channels by moving the channel button up or down.

### Select CTCSS Subchannel (00-38)

- 1 Press the mode button. After a short delay, small numbers will flash next to the channel display LCD indicating the subchannel.



- 2 Select subchannel number by moving the channel button up or down.
- 3 When the desired code is displayed push the mode button and release. An audible tone will confirm your selection.

### Select Main Channel

#### Note

Units must be on same channel and subchannel to communicate.

#### Note

Channels 8-12 generally are less used and give better results for communications in most areas.

#### Note

Push and hold the channel button for fast channel advance.

### Select CTCSS Subchannel

#### Note

Selecting a CTCSS subchannel will allow you to only hear conversations on that selection. For example, you may be with a group of friends. If all of you select channel 7 and subchannel 1, you will hear your friends but will not hear anybody else on channel 7, subchannels 2 through 38.

## Operation

### Battery Low

#### Note

When battery capacity is at the 1/4 level it is recommended that you replace alkaline batteries or recharge your NiMH (Nickel Metal Hydride) battery pack.

**Only the Cobra NiMH battery (Part #FA-BP) pack can be recharged.**

#### Note

NiMH rechargeable battery pack (Item #FA-BP) and desktop charger (Item #FA-CR) are not included with this unit. See Accessories Section on page 19.

### Auto Battery Save

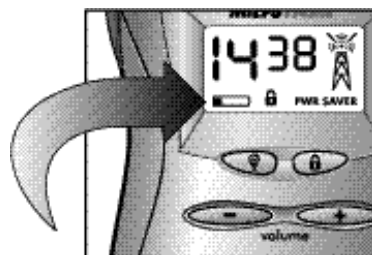
#### Note

The Auto Battery Save Circuit does not affect the unit's ability to receive incoming transmissions.

### Battery Low

When in normal use the icon may begin flashing. This is a warning to you that the batteries are getting low.

Replace alkaline batteries as soon as possible and/or recharge NiMH battery pack.



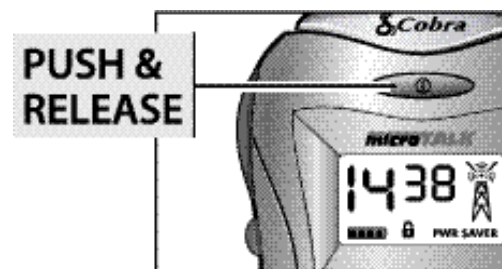
### Auto Battery Save

Your FRS 220 has a unique circuit designed to extend battery life. If there are no transmissions or receptions within 10 seconds, the unit will automatically switch to battery save mode and **PAUSE** will be shown in the display.

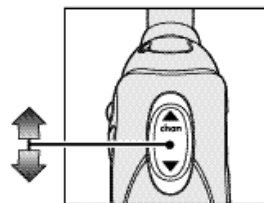
## Operation

### Calling Another Party

To alert another party that you wish to communicate:



- 1 Turn on your microTALK 2-way radio. An audible "tone" will indicate the unit is on.



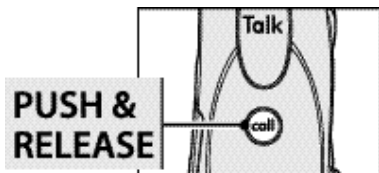
- 2 Select a channel by pushing the CHANNEL button up or down.

## Operation

**Note**  
Your incoming "Call" signal level is dependent on your unit volume setting.

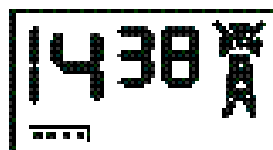
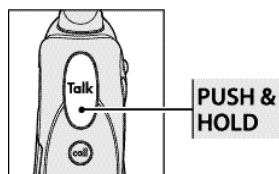
### Talking To Another Party

**Note**  
While the **Talk** button is depressed you cannot receive incoming calls.

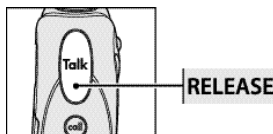
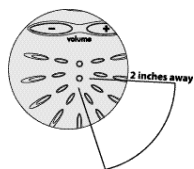


- Push and release **CALL** button. The unit you are calling will hear a two second ringing tone.

### Talking To Another Party



- Push and hold **TALK** button.
- The TX indicator will be displayed.



- Hold mic about 2 inches from mouth. Speak in a normal voice.
- Release **TALK** button and listen for response.

## Operation

### Roger Beep Confirmation Tone



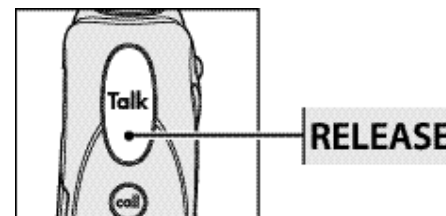
Your listener will hear an audible tone when you release the **TALK** button.

This alerts the other party that you are finished talking and it's OK for them to begin talking.

### Roger Beep Confirmation Tone

### Listening For Another Party

When finished talking:



- Release **TALK** button to receive incoming transmissions.

Your microTALK is always in listening mode when the **TALK** button is not pressed.

- Adjust volume by pushing **DOWN/UP** buttons.

### Listening For Another Party

**Note**  
While the **TALK** button is depressed you cannot receive incoming calls.

## Operation

### Lock Function

#### Note

Call button, Range Extender button and Talk button do not lock and are fully operational while the unit is locked.

The unit cannot lock while in function mode.

### Lock Function

The purpose of the LOCK function is to lock most buttons to avoid accidental operation. To engage the LOCK function:

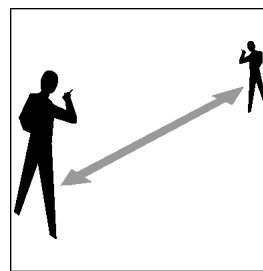


- 1 Push and hold Lock button until flashes. Channel up/down, Mode and Power buttons are now locked.
- 2 To "unlock" push and hold Lock button until disappears.

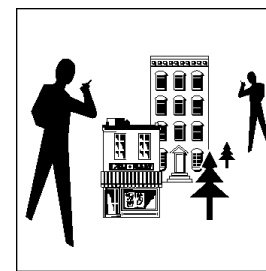
## Operation

### microTALK Range

Your microTALK Radio has a range of up to 2 miles. This effective range can be shortened under some conditions.



1. Under flat, open conditions you will experience the microTALK's maximum range.



2. Range can be reduced by buildings and foliage in the path of the signal.



3. Range will be further reduced by dense foliage and hilly terrain.

### microTALK Range

#### Note

To achieve maximum range the auto squelch can be overridden. Refer to Maximum Range Extender section on page 4.

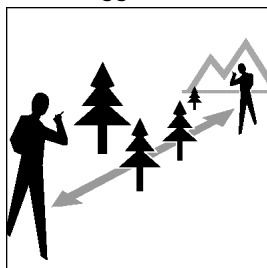


## Making Life Easier and Safer

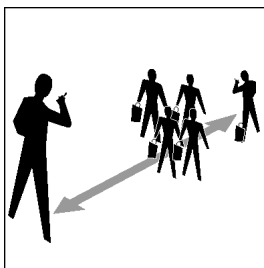
### microTALK 2-Way Radio Can Make Life Easier and Safer

#### microTALK 2-Way Radio Can Make Life Easier and Safer

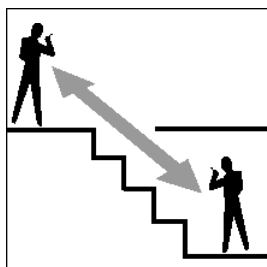
As you become familiar with your microTALK Radio you will find many of your own uses for the unit. Some suggestions include:



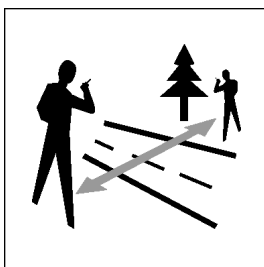
1. Talking with fellow hikers.



2. Keeping track of the kids in a shopping mall.

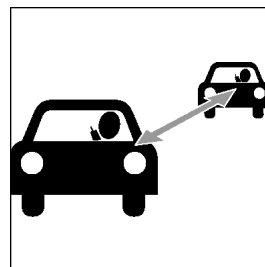


3. Communicating between basement and first, second or third floor.

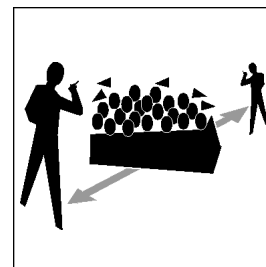


4. Talking to a neighbor or a friend.

## Making Life Easier and Safer



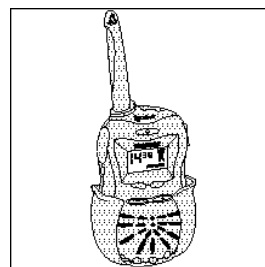
5. Checking on traveling companions in another car.



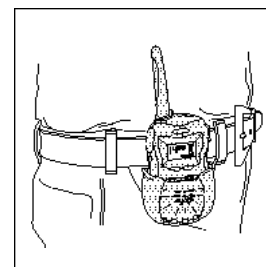
6. Agree on a meeting spot after an event.

#### Holster/Belt Clip/Desk Stand

Your microTALK Radio comes with a custom molded plastic holster. Its unique dual-function design enables it to act as a handy desktop storage unit, as well as easily attaching to your belt for maximum convenience and portability.



1. Desk Stand



2. Belt Clip

#### Holster- Belt Clip and Desk Stand

## External Microphone/ Speaker Jack

### External Microphone/ Speaker Jack

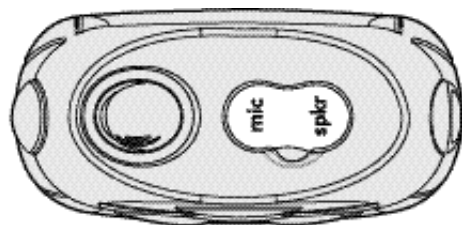
#### Note

External microphone/  
speaker is not included with  
the unit. See Accessories on  
page 19 for available units.

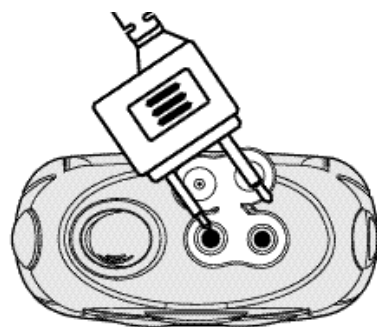
### External Microphone/Speaker Jack

Your microTALK 2-Way Radio can be fitted with  
an external microphone/speaker, (not included)  
freeing your hands for other tasks.

To attach the external microphone/speaker:



- 1 Open Spkr/Mic tab on top of unit.



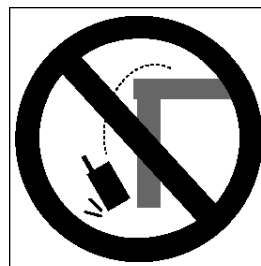
- 2 Insert plug into the Mic/Spkr jack.

## Caring for Your *micro* Radio

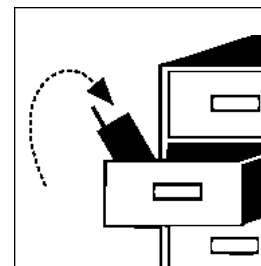
### Caring for Your microTALK Radio

The microTALK 2 Way Radio will give you years  
of service if cared for properly.

Here are some suggestions:



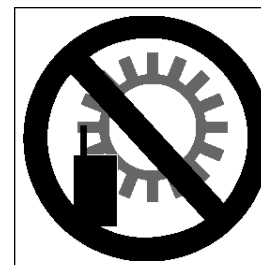
1. Handle unit gently.



2. Keep away  
from dust.



3. Never place the  
unit in water or in  
a moist place.



4. Avoid exposure  
to extreme  
temperatures.

### Caring for Your microTALK Radio

#### Note

Modifying or tampering  
with the radio's internal  
components can cause  
malfunction and will  
invalidate the warranty.  
If your radio is not perform-  
ing as it should, please call  
Cobra at 773.889.3087.  
Do not return the unit to  
the retailer.

Frequency  
Ranges

## I.GENERAL SPECIFICATIONS

A. FREQUENCIES  
CHANNEL ASSIGNMENT

| FRS<br>Channel | Channel<br>Frequency<br>in MHz | FRS<br>Channel | Channel<br>Frequency<br>in MHz |
|----------------|--------------------------------|----------------|--------------------------------|
| 1              | 462.5625                       | 8              | 467.5625                       |
| 2              | 462.5875                       | 9              | 467.5875                       |
| 3              | 462.6125                       | 10             | 467.6125                       |
| 4              | 462.6375                       | 11             | 467.6375                       |
| 5              | 462.6625                       | 12             | 467.6625                       |
| 6              | 462.6875                       | 13             | 467.6875                       |
| 7              | 462.7125                       | 14             | 467.7125                       |

## B. SUBCHANNEL ASSIGNMENTS

| CTCSS<br>Channel | Frequency | CTCSS<br>Channel | Frequency |
|------------------|-----------|------------------|-----------|
| 01               | 67.0 Hz   | 21               | 136.5 Hz  |
| 02               | 71.9 Hz   | 22               | 141.3 Hz  |
| 03               | 74.4 Hz   | 23               | 146.2 Hz  |
| 04               | 77.0 Hz   | 24               | 151.4 Hz  |
| 05               | 79.7 Hz   | 25               | 156.7 Hz  |
| 06               | 82.5 Hz   | 26               | 162.2 Hz  |
| 07               | 85.4 Hz   | 27               | 167.9 Hz  |
| 08               | 88.5 Hz   | 28               | 173.8 Hz  |
| 09               | 91.5 Hz   | 29               | 179.9 Hz  |
| 10               | 94.8 Hz   | 30               | 186.2 Hz  |
| 11               | 97.4 Hz   | 31               | 192.8 Hz  |
| 12               | 100.0 Hz  | 32               | 203.5 Hz  |
| 13               | 103.5 Hz  | 33               | 210.7 Hz  |
| 14               | 107.2 Hz  | 34               | 218.1 Hz  |
| 15               | 110.9 Hz  | 35               | 225.7 Hz  |
| 16               | 114.8 Hz  | 36               | 233.6 Hz  |
| 17               | 118.8 Hz  | 37               | 241.8 Hz  |
| 18               | 123.0 Hz  | 38               | 250.3 Hz  |
| 19               | 127.3 Hz  |                  |           |
| 20               | 131.8 Hz  |                  |           |

## C.RECEIVER

|   | UNIT    | NOMINAL |
|---|---------|---------|
| 1. SENSITIVITY<br>FOR 12dB SINAD<br>FOR CALL SIGNAL DETECTION | dBm     | -119    |
|   | dBm     | -121    |
| 2. MAX. AUDIO OUTPUT @ 10% THD                                | mW      | 150     |
| 3. MAX S/N RATIO @ 1mV RF INPUT                               | dB      | 45      |
| 4. SQUELCH  |         |         |
| a) SENSITIVITY  | dBm     | -121    |
| b) ATTACK TIME  | mS      | 120     |
| c) CLOSING TIME   | mS      | 200     |
| 5. AUDIO FREQUENCY RESP.<br>@ 300 HZ                          | dB      | -15     |
| @ 2500 HZ   | dB      | -10     |
| 6. SIGNAL DISPLACEMENT BW                                     | +/- KHZ | 5       |
| 7. ADJACENT CH.REJECTION                                      | dB      | 60      |
| 8. INTERMODULATION REJECTION                                  | dB      | 65      |
| 9. SPURIOUS RESPONSE REJECTION                                | dB      | 65      |

## D. TRANSMITTER

|   | UNIT | NOMINAL |
|---|------|---------|
| 1. EFFECTIVE RADIATED POWER             | mW   | 500     |
| 2. CARRIER FREQ.STABILITY               | Hz   | +/-500  |
| 3. MODULATION LIMITING                  | kHz  | 2.5     |
| 4. CARRIER ATTACK TIME                  | mS   | 30      |
| 5. AUDIO FREQUENCY RESPONSE<br>@ 300 HZ | dB   | -10     |
| @ 2500 HZ                               | dB   | 4       |
| 6. AUDIO DISTORTION                     | %    | 3       |
| 7. HUM NOISE                            | dB   | 38      |
| 8. TRANSIENT FREQ.BEHAVIOR<br>a) TX ON  | mS   | 30      |
| b) TX OFF                               | mS   | 5       |

## E. POWER SUPPLY

|                                |    |         |
|--------------------------------|----|---------|
| 1. BATTERY LIFE (1:1:18 RATIO) | HR | 24      |
| 2. BATTERY                     | V  | 4.2-6.0 |

## Limited Two Year Warranty



**Cobra Electronics Corporation**

6500 West Cortland Street  
Chicago, Illinois 60707

COBRA ELECTRONICS CORPORATION warrants that its COBRA FRS Radios, and the component parts thereof, will be free of defects in workmanship and materials for period of two (2) years from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

COBRA will, without charge, repair or replace, at its option, defective FRS radios, products or component parts upon delivery to the COBRA factory Service Department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

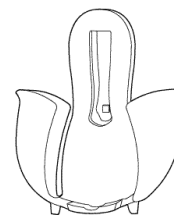
You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra's expense, if the product is repaired or replaced under warranty.

**Exclusions:** This limited warranty does not apply; 1) to any product damaged by accident; 2) in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs; 3) if the serial number has been altered, defaced or removed; 4) if the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. COBRA shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

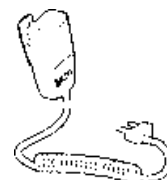
Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

## Optional Accessories



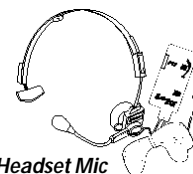
**Replacement Holster**

FA-HR1 \$4.95



**Lapel Speaker/Microphone**

Remote microphone/speaker with Push-to-Talk switch.  
MA-SM \$24.95



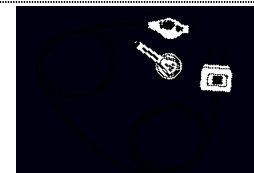
**Vox/Headset Mic**

VOX (Voice Operated Transmitter) headset and microphone allows hands-free operation.  
MA-VOX \$49.95



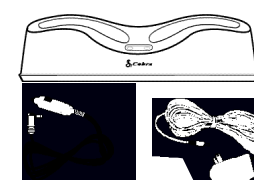
**NiMH Rechargeable Battery Pack**

High performance Nickel Metal Hydride battery pack for multiple charging.  
FA-BP \$29.95



**Ear Bud Mic with PTT**

Compact earbud and microphone with Push-to-Talk switch.  
MA-EBM \$29.95



**2 Port Desktop Charger**

Charges two microTALK radios or two NiMH battery packs.  
FA-CR \$19.95

**You Can Find These Fine Accessories At Your Local Cobra Dealer**  
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**Order by phone**  
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Please fill out order form on next page, and mail/fax directly to Cobra.

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# Accessory Order Form

## Shipping & Handling

| Amount of Order     | Shipping/Handling |
|---------------------|-------------------|
| \$25.00 and under   | \$4.75            |
| \$25.01 - \$40.00   | \$6.95            |
| \$40.01 - \$80.00   | \$9.25            |
| \$80.01 - \$120.00  | \$10.25           |
| \$120.01 - \$160.00 | \$11.75           |
| \$160.01 and up     | \$14.50           |

*For AK, HI and PR please add an additional \$15.00 for UPS shipments.*

| Item # | Description               | Cost Ea. | Qty. | Amount |
|--------|---------------------------|----------|------|--------|
| MA-EBM | Ear Bud Mic with PTT      | \$29.95  |      |        |
| MA-VOX | Vox Headset Mic           | \$49.95  |      |        |
| MA-SM  | Lapel Speaker/ Microphone | \$24.95  |      |        |
| FA-HR1 | Replacement Holster       | \$4.95   |      |        |
| FA-CR  | Charger                   | \$19.95  |      |        |
| FA-BP  | Battery                   | \$29.95  |      |        |

Prices subject to change without notice.

Tax Table  
 Illinois residents add 7%  
 Cook Co. residents add .75% (7.75% total)  
 Chicago residents add 1% (8.75% total)  
 Indiana residents add 5%  
 Michigan residents add 4 %  
 Ohio residents add 6%  
 Wisconsin residents add 5%

Subtotal \_\_\_\_\_  
 (Tax if applicable) \_\_\_\_\_  
 Shipping/handling \_\_\_\_\_  
**Total** \_\_\_\_\_

For credit card orders fill out order form and fax to: 1.773.622.2269 or call 1.773.889.3087 (Press 1 from the main menu) 8:00 am - 8:00 pm, M-F, CST.

Make check or money order (no stamps) payable to: Cobra Electronics Attn: Accessories Dept. 6500 West Cortland St. Chicago, IL 60707

Please print clearly

Name \_\_\_\_\_

Address (No P.O. Box) \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Credit Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Customer Signature \_\_\_\_\_

Circle One: Visa MasterCard Discover

*Allow 7 to 10 days for delivery. Offer valid in Continental U.S. only.*